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09/741,115	12/19/2000	Michael H. Capon	062891.0439	6419

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EXAMINER	
JAMAL, ALEXANDER	

ART UNIT	PAPER NUMBER
2643	

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/741,115	Applicant(s) CAPON ET AL.	
	Examiner Alexander Jamal	Art Unit 2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17,19-31 and 33-39* is/are rejected.

7)☒ Claim(s) *18 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6-2-2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendments

1. Based upon the submitted amendments filed 6-2-2004, examiner withdraws objections from the prior office action (3-16-2004) to the Drawings (Fig. 4), Specification, as well as the 35 USC 112 first and second paragraph rejections to claims 9 and 13.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1-11,14-15,27-31,33-37,39** rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al (4246582), and further in view of Gambuzza (6226331).

As per **claim 1,** Kondo discloses a transceiver system comprising an attenuation device (Pad 17 in abstract) that comprises a resistive circuit (pad 17 in Fig. 1) that may be a resistive H-pad (Col 3 lines 48-57) that is operable to connect to the transceiver line (which may be a twisted wire pair telephone line: Col 1 lines 48-68). However Kondo does not disclose at what frequencies his system transmits and receives data. Kondo also

does not disclose a capacitive circuit coupled in series to the resistive circuit that is operable to permit normal operation of telephone services at a subscriber premise.

Kondo discloses that his system will transmit and receive signals at two different frequencies, but he does not limit the system to any specific frequencies. It would have been obvious to one of ordinary skill in the art at the time of this application to design the transceiver system (including hybrid coil 16 and all additional circuitry) to operate at high frequencies (such as ADSL) for the purpose of being comparable with modern day transmission standards and rates.

Gambuzza discloses an isolation interface for a transceiver system (xDSL modem) on a telephone line (ABSTRACT). He teaches an inexpensive isolation system comprising two capacitive circuits (one in series with the tip wire and one in series with the ring wire as per capacitors C7, C8 in Fig. 4, or capacitors C1 and C2 in Fig. 3) for the purpose of providing an isolating termination for a transceiver system (an xDSL modem). The isolating capacitive circuits will only couple the appropriate data signals across and as such they will allow normal operation of telephone services in a subscriber premise (Col 3 lines 58-64,Col 7 lines 15-40). It would have been obvious to one of ordinary skill in the art at the time of this application to implement Gambuzza's capacitive circuits in series with the transceiver system (including the resistive pad) for the purpose of providing an isolation termination for the transceiver system disclosed by Kondo.

As per **claim 27,** claim rejected as a method performed by the system described in the rejection of claim 1. Gambuzza's capacitive circuit provides galvanic isolation (Col 3

lines 58-63) (Col 5 lines 21-52) that inherently (by definition) will filter out telephone signals received at the subscriber premise. The isolating capacitive circuits will only couple the appropriate data signals across and as such they will allow normal operation of telephone services in a subscriber premise (Col 3 lines 58-64,Col 7 lines 15-40). Because Gambuzza's isolation circuitry functions with an xdsl modem to allow the modem to receive signaling on an xdsl telephone line, the isolation circuitry inherently provides a substantially consistent amount of attenuation for data signals in the receive frequency band (Col 4 lines 16-33) for the purpose of allowing substantially consistent detection of the received data signals through the isolation circuitry.

As per **claim 35,** claim rejected for the same reasons as described in the rejections of claims 1, 27.

As per **claim 2,** Gambuzza's capacitive circuit provides galvanic isolation (Col 3 lines 58-63) (Col 5 lines 21-52) that inherently (by definition) will filter out telephone signals received at the subscriber premise.

As per **claim 3,** Gambuzza's capacitive circuit provides galvanic isolation (Col 3 lines 58-63) (Col 5 lines 21-52) that inherently (by definition) will filter out telephone signals received at the subscriber premise. Because the isolation circuits comprises series capacitors, the capacitors inherently posses decreasing amount of attenuation for data signals as the transmit frequency of the data signals increases.

As per **claim 4,** Claim rejected for the same reasons as the rejection of claim 3. Additionally, because Gambuzza's isolation circuitry functions with an xdsl modem to allow the modem to receive signaling on an xdsl telephone line, the isolation circuitry inherently provides a substantially consistent amount of attenuation for data signals in the receive frequency band (Col 4 lines 16-33) for the purpose of allowing substantially consistent detection of the received data signals through the isolation circuitry.

As per **claims 5,29,36,** Examiner takes official notice that it is notoriously well known in the art that traditional telephone signals have a frequency approximately below 4 KHz. It would have been obvious to one skilled in the art that the telephone signals would have a frequency approximately below 4KHz for the reason that the device may be used on a standard telephone line. Additionally, Gambuzza discloses that an xDSL modem (such as an ADSL modem Col 1 lines 35-55) may have a bandwidth as high as 1.1MHz, and that the modem uses an isolation barrier to filter out the low frequency telephone signals (Col 5 lines 20-52). As such, it would have been obvious to one of ordinary skill in the art at the time of this application that the transmit and receive frequency bands of the ADSL modem could be arbitrarily chosen (up to approximately 1 MHz) for the purpose that they do not interfere with each other, or with the standard low frequency signals on a standard telephone line.

As per **claim 6,** It would have been obvious to one of ordinary skill in the art at the time of this application that the attenuation provided by the attenuation device to the receive frequency band of Gambuzza's modem would be a substantially consistant value

(such as 5dB) for the purpose of allowing a substantially consistent detection of the received data signals through the isolation circuitry.

As per **claim 7,** Kondo's transceiver comprises a first (amplifier 22 in Fig. 1) and a second (amplifier 14 in Fig. 1) coupled to the subscriber line (and the capacitive isolation circuitry taught by Gambuzza) through hybrid coil 16 and Pad 17.

As per **claims 8,9,30,37,** Kondo discloses that the resistive attenuation circuit may be a resistive H-Pad (Col 3 lines 48-57). A resistive H-pad comprises the structure claimed in applicant's claim 9.

As per **claim 10,** Gambuzza discloses that the attenuating capacitive circuit comprises a first capacitive filter coupled to the tip wire of a telephone line and a second capacitive filter to couple to the ring wire (capacitors C7,C8 in Fig. 4, or capacitors C1 and C2 in Fig. 3).

As per **claim 11,** Gambuzza discloses that the attenuating capacitive circuit comprises a first capacitive filter coupled to the tip wire of a telephone line and a second capacitive filter to couple to the ring wire (GAMBUZZA: capacitors C7,C8 in Fig. 4, or capacitors C1 and C2 in Fig. 3).Kondo's attenuating circuit (to which Gambuzza's isolating capacitors would couple in series to) comprises a resistive H-Pad configuration (KONDO: Col 3 lines 48-57) that (by definition) comprises the resistive structure as per claim 9, with the first and second resistive elements respectively coupled in series to first and second capacitors.

As per **claims 14,39,** Kondo discloses that the H-Pad may be set to model the optimum impedance for the particular line for which it is being used (Col 2 lines 5-32).

The resistive H-Pad configuration (by definition of the configuration) will inherently model various lengths of twisted pair lines between the remote location (CO) and the subscriber premise (Col2 lines 23-26).

As per **claims 15, 33,** Kondo discloses that the resistive attenuation circuit may be a resistive H-Pad (Col 3 lines 48-57). Kondo discloses that the H-Pad may be set to model the optimum impedance for the particular line for which it is being used (Col 2 lines 5-32). The resistive H-Pad configuration (by definition of the configuration) will inherently model various lengths of twisted pair lines between the remote location (CO) and the subscriber premise (Col 2 lines 23-26). Kondo further discloses that there may be multiple sets of resistors (two or more resistors that may be varied in a ganged manner). This would inherently require a selector (such as a switch) for the purpose of selecting one of the resistive circuits.

As per **claim 28,** Kondo discloses that the H-Pad attenuator (the step of attenuating) may be set to model the optimum impedance for the particular line for which it is being used (Col 2 lines 5-32). The resistive H-Pad configuration (by definition of the configuration) will inherently model various lengths of twisted pair lines between the remote location (CO) and the subscriber premise (Col2 lines 23-26). This will increase the effective distance between the modem and the remote location.

As per **claim 31,** in Kondo's method the processor (inherent to the system as stated above) receives a measured signal strength from the twisted pair line and calculates an appropriate amplification or attenuation for the data signal (based upon signal strength). This information is communicated to a gain control circuit (comprising

feedback resistors 27,28) that adjusts the gain of the amplifiers 22,14 or sets the appropriate value of the resistance attenuation pad 17 (Col 4 lines 10-34).

As per **claim 34,** Kondo discloses the step of modeling the optimum impedance for the particular line for which it is being used (Col 2 lines 5-32). The resistive H-Pad configuration (by definition of the configuration) will inherently model various lengths of twisted pair lines between the remote location (CO) and the subscriber premise (Col2 lines 23-26). Kondo further discloses that there may be multiple sets (a plurality) of resistors (two or more resistors that may be varied in a ganged manner). In Kondo's method the processor (inherent to the system as stated above) receives a measured signal strength from the twisted pair line and calculates an appropriate amplification or attenuation for the data signal (based upon signal strength). This information is communicated to a gain control circuit (comprising feedback resistors 27,28) that adjusts the gain of the amplifiers 22,14 or sets the appropriate value of the resistance attenuation pad 17 (Col 4 lines 10-34).

4. **Claims 12-13,38,** rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al (4246582) and Gambuzza (6226331) as applied to claims 1-11,35, and further in view of Lundqvist (4432029).

As per **claims 12,38,** Kondo and Gambuzza disclose applicant's claims 1-11,35, but do not mention the capacitive filters comprising a resistive element in parallel with each capacitor.

Lundqvist discloses that series capacitors used in a high voltage network (such as a telephone line) may use a resistive varistor in parallel with the capacitors in order to provide overvoltage protection to the capactors (Col 1 lines 15-60). It would have been obvious to one of ordinary skill in the art at the time of this application to utilize resistive elements in parallel with the series capacitive elements on a high voltage network (telephone line) for the purpose of providing the capacitors with overvoltage protection.

As per **claim 13:** Kondo, Gambuzza and Lundqvist disclose applicant's claims 1-12 but they do not specify the exact values used in the resistive and capacitive elements.

It would have been obvious to one skilled in the art at the time of the invention to utilize appropriate component values for the fifth resistive element and the capacitive elements for the purpose of providing the appropriate amount of attenuation (filtering) for the specific application (loop characteristics/transmission standard). It would have also been obvious to one skilled in the art at the time of the invention to utilize appropriate component values for the sixth resistive element for the purpose of providing the appropriate amount of protection for the chosen capacitor values and any overvoltage levels that the capacitors may be exposed to.

5. **Claims 16-17,19-26,** rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al (4246582), and further in view of Gambuzza (6226331) and further in view of Lundqvist (4432029).

As per **claim 16,** Kondo discloses a transmission system (such as an xDSL modem) inherently comprising a housing for the transmission system for the purpose of holding and supporting all of the circuitry. The system further comprises an attenuation device (Pad 17 in abstract) comprising a resistive circuit (pad 17 in Fig. 1) that may be a resistive H-pad (Col 3 lines 48-57) that is operable to connect to the transceiver line (which may be a twisted wire pair telephone line: Col 1 lines 48-68) and has a first and second end. The resistive attenuation circuit may be a resistive H-Pad (Col 3 lines 48-57). Kondo discloses that the H-Pad may be set to model the optimum impedance for the particular line for which it is being used (Col 2 lines 5-32). The resistive H-Pad configuration (by definition of the configuration) will inherently model various lengths of twisted pair lines between the remote location (CO) and the subscriber premise (Col2 lines 23-26). Kondo further discloses that there may be multiple sets of resistors (two or more resistors that may be varied in a ganged manner). This would inherently require a selector (such as a switch) for the purpose of selecting one of the resistive circuits. The system further comprises bi-directional amplifiers 14,22 (Fig. 1) with variable gain coupled to the selector and second end of the resistive circuit 17. The system further comprises gain control circuit 29 coupled to the bi-directional amplifiers 14,22 (Col 4 lines 10-34). The system further comprises a processor coupled to Gain control circuit 29 and the amplifiers is inherent to the system (Fig. 1) for the purpose of processing the data sent and received by the modem as well as processing the sensed signal ration and controlling the gain control circuit appropriately (Col 4 lines 10-34). The system further comprises a line interface comprising hybrid coil 16 and the remaining circuitry of Fig. 1

is coupled to the selector (Pad 17) and is operable to communicate over a twisted pair line (Col 1 lines 30-68). However Kondo does not disclose at what frequencies his system transmits and receives data. Kondo further does not disclose a plurality of capacitive circuits coupled in series between the first end of the resistive circuit and selector coupled in series to the resistive circuit that is operable to permit normal operation of telephone services at a subscriber premise. He further does not disclose resistors in parallel with the capacitive circuits.

Kondo discloses that his system will transmit and receive signals at two different frequencies, but he does not limit the system to any specific frequencies. It would have been obvious to one of ordinary skill in the art at the time of this application to design the transceiver system (including hybrid coil 16 and all additional circuitry) to operate at high frequencies (such as ADSL) for the purpose of being comparable with modern day transmission standards and rates.

Gambuzza discloses an isolation interface for a transceiver system (xDSL modem) on a telephone line (ABSTRACT). He teaches that a transceiver system (such as the one disclosed by Kondo) may be an xDSL communications device used on a DSL line (ABSTRACT, Figs. 1-4). He teaches an inexpensive isolation system comprising two capacitive circuits (one in series with the tip wire and one in series with the ring wire as per capacitors C7,C8 in Fig. 4, or capacitors C1 and C2 in Fig. 3) for the purpose of providing an isolating termination for a transceiver system (an xDSL modem). The isolating capacitive circuits will only couple the appropriate data signals across and as such they will allow normal operation of telephone services in a subscriber premise (Col

3 lines 58-64,Col 7 lines 15-40). It would have been obvious to one of ordinary skill in the art at the time of this application to implement Gambuzza's capacitive circuits in series with the transceiver system (including the resistive pad) for the purpose of providing an isolation termination for the transceiver system disclosed by Kondo.

Lundqvist discloses that series capacitors used in a high voltage network (such as a telephone line) may use a resistive varistor in parallel with the capacitors in order to provide overvoltage protection to the capactors (Col 1 lines 15-60). It would have been obvious to one of ordinary skill in the art at the time of this application to utilize resistive elements in parallel with the series capacitive elements on a high voltage network (telephone line) for the purpose of providing the capacitors with overvoltage protection.

As per **claim 17,** Gambuzza's system comprises an ADSL modem that he discloses will provide an upstream and downstream data rate (Col 1 lines 19-54). The system inherently comprises a processor to train the circuitry for the data rates for the purpose of controlling the circuitry and reading the data and signaling being sent on the line. In Kondo's system the processor (inherent to the system as stated above) receives a measured signal strength from the twisted pair line and calculates an appropriate amplification for the data signal (based upon signal strength). This information is communicated to a gain control circuit (comprising feedback resistors 27,28) that adjusts the gain of the amplifiers 22,14 (Col 4 lines 10-34).

As per **claims 19,20,21,22** claims rejected for the same reasons, respectively, as the rejection of claims 2,3,4,5.

As per **claim 23,** claim rejected for the same reasons, as the rejection of claim 8.

As per **claim 24,** claim rejected for the same reasons, as the rejection of claim 14.

As per **claims 25,26,** claims rejected for the same reasons, as the rejection of claim 15.

Allowable Subject Matter

6. **Claims 18,32** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Argument

7. Applicant's arguments with respect to the combination of Kondo and Gambuzza have been considered but are moot in view of the new ground(s) of rejection. It would have been obvious (as described above) to implement Kondoss system (including the hybrid coil) such that it could transmit and receive data according to a modern day standard (see the 35 USC 103 rejection to claim 1 above)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 703-305-3433. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 703-305-4708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9315 for After Final communications.

AJ
July 15, 2004

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